ARI TECHNICAL REPORT

Development of Performance Objectives and Evaluation of Prototype Performance Tests for Eight Combat Arms MOSs

Volume I: Development of Performance Objectives for Eight Combat Arms MOSs

by

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OCTOBER 1975

Final Report-CD-(C)-75-9

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Arlington, Virginia 22209

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Unclassified

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER: HumRRO-FR-CD(C)-75-9-Vol-I 2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)*: DEVELOPMENT OF PERFORMANCE OBJECTIVES AND EVALUATION OF PROTOTYPE PERFORMANCE TESTS FOR EIGHT COMBAT ARMS MOSs. VOL I: DEVELOPMENT OF PERFORMANCE OBJECTIVES FOR EIGHT COMBAT ARMS MOSs	5. TYPE OF REPORT & PERIOD COVERED: Final Report July 1974 - October 1975 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(S): Michael R. McCluskey, Jules C. Trepagnier, Jr., Fred K. Cleary, and James M. Tripp	8. CONTRACT OR GRANT NUMBER(S): DAHC 19-74-C-0043
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Human Resources Research Organization (HumRRO), 300 North Washington Street, Alexandria, Virginia 22314	10. PROGRAM ELEMENT PROJECT TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS: U.S. Army Research Institute for the Behavioral and Social Sciences, 1300 Wilson Boulevard, Arlington, Virginia 22209	12. REPORT DATE: October 1975 13. NUMBER OF PAGES: 21
14. MONITORING AGENCY NAME & ADDRESS *(if different from Controlling Office)*	15. SECURITY CLASS. *(of this report)*: Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT *(of this Report)*

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18. SUPPLEMENTARY NOTES

Research was performed by the Columbus Office of the HumRRO Central Division (formerly HumRRO Division No. 4).
Project PERFORM

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

Combat arms	Performance objectives
Critical tasks	Performance tests
Field tests	Task inventories
Occupational specialties	Training literature

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

In the first phase of the research, 1,885 performance objectives were developed for eight key combat arms MOSs. Phase II of the project was concerned with a field investigation of four prototype performance tests. The results indicated considerable variability between different Test Administrators in terms of their test site preparation and administrative procedures. A low degree of interrater reliability was found for approximately 37 percent of the performance measures in each test. In general, the perceived face validity of each test was high in terms of job relevance and fairness.

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Unclassified

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

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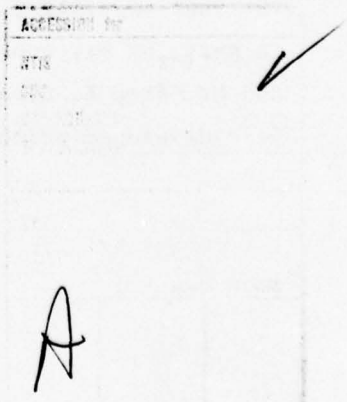
SUMMARY

INTRODUCTION

This report presents the results of a project conducted in support of work concerned with development of the U.S. Army's Enlisted Personnel Management System (EPMS). The project was conducted in two independent but somewhat related phases. Phase I was devoted to development of performance objectives for critical or important tasks of eight combat arms MOSs. Phase II was devoted to a field investigation designed to determine the potential reliability, validity, and feasibility of prototype performance tests developed from the performance objectives.

PHASE I

The objective of Phase I of Project PERFORM was to develop performance objectives for all job tasks that were rated either "critical" or "important" in eight of the combat arms MOSs. Performance objectives were developed in 39 different task categories; each objective consisted of a task statement, the conditions of task performance, performance standards, and references. The task criticality ratings determined four different levels of application for the performance objectives: *Common*--applicable to all eight MOS; *Semi-Common*--appropriate to the MOSs in two or more combat arms branches; *Branch*--required for both MOSs of only one branch; and *MOS*--unique to only one MOS. The objectives were developed and finalized through a high degree of interaction between subject matter experts, staff personnel of the combat arms schools, USACATB personnel, and the HumRRO researchers. Phase I resulted in the following numbers of performance objectives for each branch: Infantry--397, Armor--591, Field Artillery--316, and Air Defense--581.



PREFACE

The research described in this report was conducted by the Human Resources Research Organization (HumRRO) under Contract DAHC19-74-C-0043 with the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI). The research was a joint effort between the U.S. Army Infantry School, U.S. Army Armor School, U.S. Army Field Artillery School, U.S. Army Air Defense School, U.S. Army Combat Arms Training Board (USACATB), U.S. Army Research Institute/Human Research Unit at Fort Benning, Georgia, and HumRRO.

Dr. Milton H. Maier (ARI, Arlington, Virginia) served as the Contracting Officer's Technical Representative for the entire project. Designated points of contact and coordination within ARI were Dr. James A. Caviness (Fort Benning) and Dr. Douglas L. Young (Arlington, Virginia). The Columbus Office of the HumRRO Central Division (formerly HumRRO Division No. 4) was responsible for overall project planning and execution. Dr. T.O. Jacobs was the Director when the research was begun. Dr. Wallace W. Prophet is the current Director of the Central Division and Dr. Joseph A. Olmstead is the Columbus Office Director. Mr. Michael R. McCluskey served as Principal Investigator of the project. The U.S. Army Combat Arms Training Board (USACATB) was the military sponsor of the research and COL Franklin A. Hart was President of the Board. The original Project Officer at USACATB was MAJ Edgar D. Maddox, who was solely responsible for initiating the research requirement which led to the completion of this project. Succeeding Project Officers at USACATB were LTC William Valen and CPT Walter Nakano.

Three HumRRO research offices participated in the Phase I activities. In addition to overall planning and management, the Columbus Office of the Central Division developed performance objectives for the Infantry School and the Field Artillery School. Mr. Jules C. Trepagnier, Jr. developed the vast majority of these objectives for both schools. He was assisted, in part, by Mr. George J. Magner, Mr. James M. Tripp, Mr. Jeffery L. Maxey, and Mr. Fred K. Cleary. The performance objectives for the Armor School were developed principally by Mr. James H. Harris, with additional input

from Mr. Roy C. Campbell and Mr. J. Patrick Ford. These activities of the HumRRO Central Division-Louisville Office were completed under the general supervision of Mr. William C. Osborn, Office Director. The performance objectives for the Air Defense School were developed primarily by Mr. Paul Hermann under the direct supervision of Dr. E.W. Frederickson at the HumRRO Western Division-El Paso Office of which Dr. R.D. Baldwin is Office Director.

The research activities of Phase II were completed by the HumRRO Central Division-Columbus Office and the ARI Human Research Unit at Fort Benning. Mr. Jules C. Trepagnier, Jr. and Mr. James M. Tripp (HumRRO) were responsible for the overall coordination and execution of the field investigation. LTC Robert G. Matheson, Chief of the ARI Human Research Unit at Fort Benning, provided the following personnel for assistance during the preparation and data collection phases of the field test: SSG John E. Lang, SP4 Keith L. Evans, and SP4 William W. Fox.

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President
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INTRODUCTION

This report presents the results of a project conducted in support of work concerned with development of the U.S. Army's Enlisted Personnel Management System (EPMS). The project was conducted in two independent but somewhat related phases. Phase I was devoted to development of performance objectives for critical or important tasks of eight combat arms MOSs. Phase II was devoted to a field investigation designed to determine the potential reliability, validity, and feasibility of prototype performance tests and to identify variables in the development and administration of performance tests that will impact upon their validity and reliability.

OBJECTIVE OF PHASE I

The previous 8 MOS Project resulted in basic job task information for eight of the combat arms MOSs. After this project had been completed, the criticality of task statements with respect to MOS duites was determined by the combat arms schools, using a four-point rating scale. Each task was rated as either "critical," "important," "nice-to-know," or "irrelevant."

The objective of Phase I of this project was to develop performance objectives for all tasks in the eight MOSs that received a rating of either "critical" or "important." Each performance objective consisted of four components: (1) a statement of the job task; (2) a statement of the conditions of task performance, including equipment, personnel, and facility requirements; (3) the performance standards which described the end product of the task or the sequence of actions in the performance, and, in many cases, both; and (4) a list of references.

BACKGROUND

Acting on the recommendations of the Board for Dynamic Training, the Chief of Staff for the Army established the U.S. Army Combat Arms Training Board (USACATB) on 9 November 1971.[1] The USACATB determined that the

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[1]AR 10-2.

first step toward the development of improved MOS tests, multimedia training materials for the MOSs, and MOS proficiency manuals should be the simultaneous systems engineering of eight key combat arms MOS (11B, 11C, 11D, 11E, 13B, 13E, 16P, and 16R). For soldiers in these MOSs, this effort would provide clear definitions of job tasks which would be used in the development of basic reference materials and instructional programs.

The basic objective of the 8 MOS Project, initiated to fulfill needs of USACATB, was to derive the task inventories and job task data for duty positions in the eight combat arms MOSs. The tasks in each inventory were further identified as (1) common to all soldiers in the eight MOSs, (2) common to all soldiers in the two selected MOSs of each branch, and (3) unique for a specific MOS. The product of this project consisted basically of (a) commonalities and noncommonalities in task performance between various duty positions, (b) information to serve as the basis for recommendations concerning the training and evaluation of job incumbents, and (c) information relevant to changes in the structure of a given MOS. Criticality measures for job tasks and the final development of job task data were beyond the scope of the project. At the time the final report was submitted,[1] two different work efforts, which formed the basis for Project PERFORM, were in progress. One was the continued development of job task data and training materials by the combat arms schools. The second activity was the development of criticality ratings in terms of mission accomplishment for each task statement. The latter effort was coordinated through the combat arms schools by USACATB.

During the 8 MOS Project, the milestone dates did not permit thorough development of job task data. As a result, many of the statements for job conditions and job standards were not sufficiently explicit. The combat arms schools were continuing the process of job task data refinement, but most of the statements still required further definition.

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[1]Michael R. McCluskey, T.O. Jacobs, and Fred K. Cleary. *Systems Engineering of Training for Eight Combat Arms MOSs*. Alexandria, Va.: Human Resources Research Organization, Technical Report 74-12, June 1974.

Concurrent with the review and revision of job task data, the schools were also in the process of developing training materials based on the existing job task data. This dual effort probably reduced the appropriateness of the resulting training materials since the performance objectives had not been clearly and completely defined. In some cases, the job tasks were fairly specific statements of behavior, and several different analysts would probably have the same interpretation of the behavior. In many other cases, however, general task statements probably led to assumptions concerning the intended meaning, and without explicit performance standards, inappropriate training materials might have been developed.

In order to develop relevant training materials, detailed performance objectives based on complete job task data were needed. It was anticipated that detailed performance objectives would provide an operational definition of the desired behavior and eliminate misinterpretation concerning the end product of the training. The objectives were expected to serve as the basic foundation for performance-based instruction and evaluation.

Following the 8 MOS Project, it became apparent that training materials could not be developed for all tasks that had been identified. In order to establish priorities for task statements, USACATB devised a rating scale which was administered for all tasks, and coordinated with the combat arms schools. The scale required rating each task as "critical," "important," "nice-to-know," or "irrelevant." The results of the ratings provided the basis for determining the scope of the Phase I research. In this project, performance objectives were developed for all tasks that received a rating of either "critical" or "important."

METHOD

SCOPE OF PROJECT

The work accomplished in Phase I consisted of the development of performance objectives for certain of the tasks identified in the 8 MOS Project. The tasks for which performance objectives were developed were those which met *all* of these criteria: (1) performance at a specified minimum level of proficiency, at one or more of the skill levels (10, 20, 40) is "critical" or "important;" (2) proficiency in performing the task can be measured, either through observation of the actions involved or through examination of an end product; and (3) the conditions which significantly influence on-the-job (i.e., real-world) performance of the task can be sufficiently approximated in a test situation for the behavior of a soldier being tested to be considered representative of that which he would exhibit in a real-world situation.

The following generalized mission statement was used as a frame of reference in establishing the on-the-job performance conditions that must be approximated:

> "Perform duties in forward combat zone under field conditions for sustained periods. Duties are performed both day and night under climatic and terrain conditions normally encountered in the United States and Western Europe. Vehicle movement is normally conducted over secondary or unimproved roads, and hasty stream crossings of personnel, vehicles, weapons, and equipment are periodically required. The enemy has a CBR capability. Friendly forces do not have continuous air superiority. In addition to participation in offensive, defensive, and retrograde operations, personnel periodically move to the rear for refitting and retraining. During these periods, personnel normally encounter routine administration, military courtesy and discipline; participate in parades and ceremonies; and take part in physical fitness programs."[1]

TASK CATEGORIES

During work on the 8 MOS Project, it was found that specific mission statements needed for development of task inventories, required for Project PERFORM, did not exist for the majority of the eight MOSs. Also the time

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[1] *Ibid*

constraints of the project did not permit their development prior to the initiation of Project PERFORM. To provide a structure which permitted the schools to begin immediate development of the task inventories, a category (subject area) system was instituted.[1] This category system provided a tentative framework for grouping the tasks of a given subject into the same category.

Under this system, 44 tentative categories of tasks were established. As work progressed, the categories were revised to (1) move some tasks from one category to another, (2) eliminate some tasks that did not meet all criteria, (3) eliminate those categories whose tasks were principally abstractions, and (4) create some new categories. From this, there finally emerged a total of 39 categories (Table 1).

SURVEY OF LITERATURE

The initial step in developing performance objectives for the tasks of a category was the collection and study of doctrinal and training material relevant to the subject area. This material included Field Manuals, Technical Manuals, Army Training Programs, Army Subject Schedules, Training Circulars, TRADOC Pamphlets (particularly "SMART" books), and, when available, lesson plans and other instructional material of the combat arms schools.

DEVELOPMENT OF SKILL LEVEL MATRICES

When the 8 MOS Project was completed, it was apparent that the tasks identified varied widely in their relative importance to mission accomplishment, and that time constraints precluded the development of performance objectives for *all* of the tasks. To establish priorities, USACATB devised a rating scale which was applied to each task. This scale required the rating of each task as "critical" (3), "important" (2), "nice-to-know" (1), or "irrelevant" (0) in terms of the importance of successful performance for mission accomplishment.

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[1]Frank L. Brown and T.O. Jacobs. *Developing the Critical Combat Performance Required of the Infantry Rifle Platoon Leader.* Alexandria, Va.: Human Resources Research Organization, Technical Report 70-5, April 1970.

Table 1

CATEGORIES FOR WHICH PERFORMANCE OBJECTIVES WERE DEVELOPED

Category Number	Title
1	First Aid
2	Personal Hygiene
3	Land Navigation
4	CBR (Flame Weapons)
5	Physical Conditioning
6	Military Instruction and Training
7	Dismounted Drill and Inspections
8	Code of Conduct, Survival and Escape and Evasion
9	Intelligence and Counterintelligence
11	Communications
12	Cover, Concealment, and Camouflage
13	General Maintenance
14	Pistols
15	Rifles
16	Grenade Launcher M203
17	Machineguns
19	Wheeled Vehicles
20	Tracked Vehicles
21	Radar, Early Warning, and Night Vision Devices
22	Demolitions
23	Obstacles, Boobytraps and Mine Warfare
24	Recon, Security and Combat Patrols
25	Antitank Weapons
26	Fire Requests and Adjustment
27	Tactics (Combat Techniques)
29	Mortars
30	Tube Artillery
31	Air Defense Weapons System
32	Mortar Fire Direction Procedures
33	Tube Artillery Fire Direction Procedures
34	Command and Control (Air Defense Fire Control Procedures)
40	Administration, Supply, and Mess
41	Hand Grenades
43	Ammunition Handling
44	Early Warning Devices
45	Training Management
46	Operational Duties
47	Security/Intelligence
48	Administration

From these ratings, the tasks of each category were grouped on a Skill Level Matrix form (Figure 1) under headings of:

Common -- critical or important at one or more skill levels of each MOS

Semi-Common -- critical or important to two or more branches, but not to all

Branch -- critical or important to only one branch

MOS -- critical or important to only one MOS

The skill level matrices were utilized to identify the tasks which met the first criterion for the development of performance objectives.

DEVELOPMENT OF TASK SEQUENCE

To facilitate use by trainers in the development of performance-oriented training and by soldiers as learning devices, the performance objectives were developed by task-type grouping--common, semi-common, branch, and MOS. Within task-type group, development was in order of performance on-the-job for those tasks which were elements of more complex tasks, and from simple to complex for those tasks whose performance was not necessarily sequential. Within each grouping, this procedure produced the sequence that was most logical and behaviorally accurate.

DEVELOPMENT OF CONDITIONS AND STANDARDS

Conditions

The Conditions section of each performance objective prescribed the location, visibility, weather, organizational equipment, and individual uniform and equipment associated with the performance of a given task.

The first step in developing each Conditions section was an analysis of the task to identify all conditions under which a soldier would perform the task on-the-job. These conditions were then analyzed to identify those which significantly affected task performance. Those conditions that were judged to have a significant impact on task performance were then described as completely and accurately as possible in the Conditions section of the objective.

SKILL LEVEL MATRIX

CATEGORY 3 : LAND NAVIGATION

Task	Skill Level	MOS							
		11B	11C	11D	11E	13A, B	13E	16P	16R
COMMON	10	1	1	3	1	1	0	3	3
Measure a magnetic azimuth with a lensatic compass	20	2	2	3	2	2	2	3	3
	40	3	3	3	3	3	3	3	3
SEMI-COMMON	10	0	0	1	0	0	0	1	1
Prepare a sketch map	20	0	0	2	1	0	1	1	1
	40	1	1	3	2	2	3	2	2
BRANCH	10			1	0				
Determine the scale of an aerial photograph	20			1	0				
	40			3	2				
MOS 11B	10	0							
Locate position on ground using aircraft overhead	20	1							
	40	3							
MOS 11C	10		0						
Measure a grid azimuth with an M2 compass	20		3						
	40		3						
	10								
	20								
	40								
	10								
	20								
	40								
	10								
	20								
	40								
	10								
	20								
	40								

Figure 1. Skill Level Matrix

Standards

The Standards section of each performance objective specified how well, how completely, how accurately, or how rapidly a soldier must perform a given task to demonstrate minimum acceptable proficiency. This section was intended to fully inform the soldier of the proficiency level he must attain, and to provide trainers definitive guidance for preparing training and evaluation materials. In addition, each Standards section was designed to serve as a diagnostic instrument for trainers, and to be amenable to refinement to provide for differentiation between degrees of proficiency, either above or below the minimum acceptable level.

A task was first examined to determine whether the performance expected of the soldier would best be described (1) in terms of the sequence of actions whose execution would result in completion of the task, (2) in terms of the product that would result from completion of the task, or (3) in terms of both actions and end product. After this determination had been made, official publications were searched for explicitly stated standards for performance of the task.

Where published performance standards were found, the development of the Standards section involved (1) correct interpretation of the publication, (2) appropriate expression of the requirements for speed, accuracy, quantity, or sequence of actions, and (3) refinement to produce a clear statement of the behaviors to be measured, the measurement techniques to be used, and the criterion level of minimum acceptable performance.

For tasks that did not have published standards, the performance standards were derived, either from standards implicit in the task or analysis of all aspects of the behavior involved in performing the task, and through discussions with subject matter experts.

REVIEW AND REVISION OF PERFORMANCE OBJECTIVES

During development of the performance objectives, the HumRRO staff and the Subject Matter Experts (SMEs) assigned by the combat arms schools coordinated very closely with continual review and revision as work progressed. On completion of the developmental effort, the performance

objectives were formally reviewed by the SME. They were then revised, as appropriate, and formally reviewed by the proponent service schools. Following this review, input from the schools, if any, was incorporated and the performance objectives submitted to ARI as final products.

PRODUCTS

The performance objectives developed during this phase of the project must be regarded as the first step in a process rather than a final end product. The task, condition, and standard components of each objective will undergo continual revision in an evolutionary process. When changes are made in job requirements, pieces of equipment, or specific situations of application, the performance objectives must be modified to reflect these changes and validated again with respect to the changing job structure. Thus, the objectives will never be finalized, but rather continually changing, based on information from a variety of feedback mechanisms.

Phase I resulted in a total of 1885 performance objectives. These objectives were distributed across the eight MOSs and four types of tasks--common, semi-common, branch, and MOS. A task and its corresponding performance objective were considered to be common to the eight MOSs if the task was rated either "critical" or "important" for at least one skill level in each of the MOSs. Tasks were defined as semi-common if "critical" or "important" ratings were obtained for MOSs in two or more of the combat arms branches. Branch tasks resulted when the appropriate ratings were obtained for both MOSs within a single branch, and MOS tasks were those found to be "critical" or "important" for a single MOS.

During the entire performance objective development period, there were numerous changes in the numbers of objectives originally projected for each branch based on the criticality ratings. These changes were generally the result of adding or eliminating task categories, eliminating task statements, major revisions of task inventories within a category, or further subdividing or grouping of task statements. The overall number of performance objectives developed by combat arms branch and task type are given in Table 2. A more detailed listing of the number of objectives is provided in Table 3, which is a tabulation by task category, combat arms branch, and task type.

For a given task category, the performance objective development process was based on a high degree of interaction between the HumRRO scientist and the Subject Matter Expert (SME) designated to support the project. The primary coordination points for SME comments and judgments, in terms of their content expertise and experience, were as follows:

Table 2

NUMBER OF PERFORMANCE OBJECTIVES DEVELOPED FOR EACH COMBAT ARMS BRANCH AND TASK TYPE

Branch	Number of Objectives				
	Common	Semi-Common	Branch	MOS	Total
Infantry	179	49	28	141	397
Armor	178	7	160	246	591
Field Artillery	104	33		179	316
Air Defense	161	11	4	405	581
Total	622	100	192	971	1885

1. Review of task criticality ratings. The purpose of this review was to reduce the task inventories for each skill level to a list which would be a valid reflection of job requirements and would also be feasible and realistic in terms of training and evaluation.

2. Review of conditions and standards. Occasionally, the SME was called upon during the initial development of the objectives when particularly difficult or unusual tasks were encountered. The purpose of this interaction was to insure that the approach was technically accurate and realistic with respect to job requirements.

3. Review of performance objectives for a given task category. The purpose of this review was to provide a detailed examination of all materials with respect to sequence, technical accuracy, and job relevance.

After the above inputs were received from the SME and appropriate revisions completed, the category of performance objectives was distributed to the appropriate combat arms schools for review and comment. The purpose of this review was to insure that the materials were consistent with academic department position and doctrine for the specific MOS indicated by the criticality ratings.

Table 3

NUMBER OF PERFORMANCE OBJECTIVES DEVELOPED FOR EACH COMBAT ARMS BRANCH, TASK TYPE, AND TASK CATEGORY

	Task Category	Task Type	Branch			
			Infantry	Armor	Field Artillery	Air Defense
1.	First Aid	Common				32
		Semi-Common				8
		Branch		7		
2.	Personal Hygiene	Common				17
		Semi-Common				3
3.	Land Navigation	Common	32			
		Semi-Common	2			
		Branch		2		
		MOS	3			
4.	CBR (Flame Weapons)	Common			19	
		Semi-Common			5	
		Branch	6	5		
5.	*Physical Conditioning*	*Common*	4			
6.	Military Instruction and Training	Common	11			
7.	Dismounted Drill and Inspections	Common	9			
		Semi-Common	3			
8.	Code of Conduct, Survival and Escape and Evasion	Common	9			
		Semi-Common	2			
		Branch	1			
9.	Intelligence and Counter-Intelligence	Common		20		
		Semi-Common		4		
		Branch	5	1		
		MOS	1	1		
11.	Communications	Common			21	
		Semi-Common			18	
		Branch		14		
		MOS	4		5	
12.	Cover, Concealment, and Camouflage	Common			13	
		Branch		2		
		MOS			1	

(continued)

Table 3 (continued)

Task Category	Task Type	Branch			
		Infantry	Armor	Field Artillery	Air Defense
13. General Maintenance	Common		23		
	Branch		22		
	MOS				250
14. Pistols	Common		13		
	Semi-Common		1		
15. Rifles	Common	20			
	Semi-Common	1			
	Branch		1		
16. Grenade Launcher	Common	9			
	Branch		9		
17. Machineguns	Common	33			
	Semi-Common	2			
	Branch		12		
	MOS		81		
19. Wheeled Vehicles	Common		29		93
	Branch		4		
20. Tracked Vehicles	Common		35		
	Branch		3		
	MOS		163	2	
21. Radar, Early Warning, and Night Vision Devices	Semi-Common	16			
	MOS	1			6
22. Demolitions	Common		19		
	Semi-Common		2		
23. Obstacles, Boobytraps and Mine Warfare	Common	18			
	Branch	12	23		
	MOS	1		6	
24. Recon, Security and Combat Patrols	Semi-Common	23			
	Branch		19		
	MOS	6			
25. Antitank Weapons (LAW)	Common	6			
(TOW)	MOS	11			
(90mm RR)	MOS	18			
(106mm RR)	MOS	22			
(Dragon)	MOS	9			

(continued)

Table 3 (continued)

	Task Category	Task Type	Branch			
			Infantry	Armor	Field Artillery	Air Defense
26.	Fire Requests and Adjustment	Common			10	
		Branch	3			
		MOS	9		11	
27.	Tactics (Combat Techniques)	Semi-Common			7	
		Branch		18		
		MOS		1	22	
29.	Mortars	Branch		10		
		MOS	34			
30.	Tube Artillery	MOS			67	
31.	Air Defense Weapons System	Branch				4
		MOS				108
32.	Mortar Fire Direction Procedures	MOS	22			
33.	Tube Artillery Fire Direction Procedures	MOS			53	
34.	Command and Control (Air Defense Fire Control Procedures)	MOS				34
40.	Administration, Supply, and Mess	Common				7
41.	Hand Grenades	Common	7			
43.	Ammunition Handling	Common			7	
		Branch		5		
		MOS			12	7
44.	Early Warning Devices	Semi-Common			3	
		Branch	1			
45.	Training Management	Common	21			
46.	Operational Duties	Common			34	
		Branch		3		
47.	Security/Intelligence	Common		39		
48.	Administration	Common				12

The extent to which the reviews were successfully accomplished is questionable, and should be considered when examining or utilizing the performance objectives. Although the majority of the SMEs were very well qualified and readily available, occasionally some of the SMEs did not appear to be sufficiently qualified or experienced in the specific subject area, or they were not able to devote an adequate amount of time to the review of performance objectives because of other priorities. In addition, requests were made for several SMEs to review each category of performance objectives for increased reliability, but in all cases only one SME was provided. With respect to the combat arms school staff review, it did not appear that these reviews were as thorough as they should have been based on the number and nature of the comments received. These possible problem areas are mentioned to prevent the assumption that *all* of the performance objectives are technically accurate, reflections of actual job requirements, consistent with current doctrine, and representative of academic department and school position. In the vast majority of the cases, however, this assumption is valid.

The performance objectives developed during Phase I of the project cover 93 duty positions in the eight MOSs, and may be directly utilized by curriculum planners, training developers, test developers, and training managers. Most of the objectives include both process and product measurement in the performance standard. This provision increases the flexibility and utility of the materials from the point of view of development of training and evaluation materials. The same set of objectives may be utilized without substantial conversion to provide the basic foundation for performance-based instruction and evaluation. By controlling training and evaluation in this manner, trainees, trainers, training managers, and test control officers will share a clear and accurate perception of the criterion behavior desired at the end of training.